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communication to the Amsterdam Academy.[24] Miss PEKELHARING found it possible, by using potash-alum properly balanced in the culture solution, to grow some roots of *Lepidium sativum* fairly straight and free of starch grains. Nevertheless, these roots, in many cases, showed geotropic curvatures; from which it is evident that there is perception independent of statolith starch, however useful this may be when present.—C. R. B.

Chromosomes of Taraxacum and Rosa.—In 1903 RAUNKIAER found that Taraxacum developed embryos even when all the anthers had been removed, and a subsequent cytological study by MURBECK and JUEL showed that the embryos developed from the egg without fertilization. A recent study by ROSENBERG[25] shows that in the form called *Taraxacum confertum* a typical tetrad of megaspores is formed from the megaspore mother cell, and that the reduced number of chromosomes is 8, which can be counted in an early stage as prochromosomes. JUEL had reported 12 or 13 as the reduced number and 26 as the diploid number in apogamous forms of Taraxacum.

In several forms of Rosa it has been known that embryos develop even when the anthers have been removed, but ROSENBERG is not yet able to say upon cytological evidence whether these forms are apogamous or not. In the pollen mother cells of *Rosa canina* he finds, usually, about 20 univalent chromosomes and 7 bivalent ones. During the first mitosis chromosomes become disarranged, as in Hemerocallis, and more than four pollen grains are formed from a single mother cell. He thinks that the suggestion may not be entirely unfounded that the univalent chromosomes, which normally split at the second mitosis, may split at the first, and thus show a transition to the vegetative mode of division. He gives a table showing the relatively high chromosome numbers of apogamous forms.—CHARLES J. CHAMBERLAIN.

Light and germination.—HEINRICHER[26] finds, in agreement with REMER, that the seeds of *Phacelia tanacetifolia* are greatly hindered in their germination by light. Seeds just harvested and not first dried out will not germinate at all in white light, nor in the less refrangible rays, while a considerable percentage germinate in darkness and a smaller percentage in the more refrangible rays. A period of drying, whether it occurs in darkness or light, greatly increases germination in darkness and in the more refrangible rays, while it leads to a low percentage of germination in white light and in the less refrangible rays. The behavior of these seeds toward light is in most respects just opposite to that of the seeds of *Veronica peregrina.*

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[24] WENT, F. A. F. C., The inadmissibility of the statolith theory of geotropism. Proc. Koninkl. Akad. Wetens. Amsterdam **1909**:343–345.

[25] ROSENBERG, O., Ueber die Chromosomenzahlen bei Taraxacum und Rosa. Svensk. Bot. Tidskrift **3**:150–162. *figs. 7.* 1909.

[26] HEINRICHER, E., Keimung von *Phacelia tanacetifolia* Benth. und das Licht. Bot. Zeit. **67**^{1}:45–66. 1909.